

REMARKS

Applicant cancels claims 1, 5 and 14-16 without prejudice or disclaimer. Therefore, claims 2-4, 6-13 and 17-21, are now pending in the application.

The Examiner rejects claims 13-16 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite, and rejects claims 1 and 5 under 35 U.S.C. § 102(b) as allegedly anticipated by Shiotani.

The Examiner indicates that claims 2-4, 6-12 and 17-21 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and that claims 13-16 would be allowable if amended to overcome the §112, second paragraph, rejection and to include the limitations of the base claim and any intervening claims.

Applicant cancels claims 1, 5 and 14-16, rewrites claims 2, 3 and 13 in independent form, amends claim 6 to depend on claim 2 and amends claims 17-19 and 21 to depend on claim 6. These amendments do not narrow the scope of the claims beyond the scope of the original claims 2, 3 and 13. No estoppel is created.

Since claims 2 and 3 are allowable, and the amendment to claim 13 is believed to overcome the 35 U.S.C. § 112, second paragraph, rejection, all of the pending claims 2-4, 6-13 and 17-21 should now be allowed.

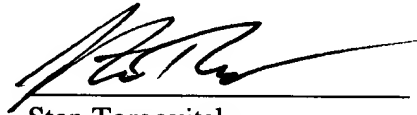
Finally, Applicant submits herewith a Proposed Drawing Correction and Submission of Corrected Drawings labeling Figs. 13 and 14 as Prior Art. The Examiner is respectfully requested to approve these drawings.

AMENDMENT UNDER 37 C.F.R. § 1.111
Appln. No. 09/936,332

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE



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PATENT TRADEMARK OFFICE

Date: May 27, 2003

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 1, 5 and 14-16 are canceled.

The claims are amended as follows:

2. (Twice Amended) ~~The A~~ thrust converter ~~according to claim 1~~ comprising:
reciprocating movement section;
reciprocation-rotation conversion section for converting reciprocating movement of the
reciprocation movement section into rotational movement;
rotation-reciprocation conversion section for converting rotational movement of the
reciprocation-rotation conversion section into reciprocating movement; and
reaction-force receiving section for supporting reaction force of reciprocating movement
of the rotation-reciprocation conversion section,

wherein the reciprocation movement section, the reciprocation-rotation conversion section, the rotation-reciprocation conversion section, and the reaction-force receiving section are aligned in one line; and a through hole is formed to pass through the center axes thereof.

3. (Twice Amended) ~~The A~~ thrust converter ~~according to claim 1~~ comprising:
reciprocating movement section;

reciprocation-rotation conversion section for converting reciprocating movement of the reciprocation movement section into rotational movement;

rotation-reciprocation conversion section for converting rotational movement of the reciprocation-rotation conversion section into reciprocating movement; and

reaction-force receiving section for supporting reaction force of reciprocating movement of the rotation-reciprocation conversion section,

wherein the reciprocation-rotation converter section comprises a first screw member to which axial thrust is imparted by the reciprocation movement section, a second screw member to be screw-engaged with the first screw member, and a first detent section for locking the first screw member to restrict movement to only an axial direction;

the rotation-reciprocation conversion section comprises a screw section provided on the second screw member in a position different from the location of a screw section to be screw-engaged with the first screw member, a third screw member to be screw-engaged with the screw section, and a second detent section for locking the third screw member to restrict movement to only an axial direction; and

the reaction-force receiving section comprises a substrate, the second screw member, and a first shaft bearing for supporting the second screw member on the substrate to allow rotation and to prohibit axial movement.

6. (Twice Amended) The thrust converter according to claim ~~1~~2, wherein the reciprocation movement section comprises a motor, a fourth screw member provided on a load-side extremity of a shaft of the motor, a fifth screw member to be screw-engaged with the fourth screw member, a third detent section for locking the fifth screw member to restrict movement to only an axial direction, and motor rotation-reciprocation conversion section for converting the rotating movement of the shaft of the motor into reciprocating movement;

the reciprocation-rotation conversion section comprises a first screw member supported by the fifth screw member to allow rotation and to prohibit axial movement by way of a second shaft bearing, a second screw member to be screw-engaged with the first screw member, and a first detent section for locking the first screw member to restrict movement to only the axial direction;

the rotation-reciprocation conversion section comprises a screw section provided on the second screw member in a position different from the location of a screw section to be screw-engaged with the first screw member, a third screw member to be screw-engaged with the screw section, and a second detent section for locking the third screw member to restrict movement to only an axial direction; and

the reaction-force receiving section comprises a substrate, the second screw member, and a first shaft bearing for supporting the second screw member on the substrate to allow rotation and to prohibit axial movement.

13. (Twice Amended) A method of controlling ~~the a~~ a thrust converter as defined in ~~claim 5~~ comprising a reciprocation movement section which comprises a motor, and a motor rotation-reciprocation conversion section for converting rotating movement of a shaft of the motor into reciprocating movement, wherein a motor whose torque can be controlled through current control is used as the motor, and constant thrust is produced by constant control of the current to the motor, the method comprising:

converting reciprocating movement of a reciprocation movement section into rotational movement;

converting rotational movement of a reciprocation-rotation conversion section into reciprocating movement; and

supporting reaction force of reciprocating movement of the rotation-reciprocation conversion section.

17. (Twice Amended) A controller for controlling the thrust converter defined in claim ~~5~~6, comprising:

an input section for entering a moving status of an external drive source other than a drive source of the thrust converter;

computation section for computing the amount of correction used for correcting the position or torque of a motor of the thrust converter on the basis of the moving status entered by way of the input section; and

correction section for correcting the position or torque of the motor of the thrust converter on the basis of the computed amount of correction.

18. (Twice Amended) A controller for controlling the thrust converter as defined in claim 56, comprising:

an input section for entering the temperature of a machine having provided thereon the thrust converter;

section for computing the amount of correction required for correcting the position of a motor of the thrust converter or reading the amount of correction from memory; and

correction section for correcting the position of the motor of the thrust converter in accordance with the amount of correction.

19. (Twice Amended) A controller for controlling the thrust converter as defined in claim 56, comprising:

a manual instruction device for inputting a positional instruction to a motor whose torque and position can be controlled;

control section for controlling the position and torque of the motor; and

changeover section for which operates the motor through position control on the basis of a difference when a difference between the positional instruction and the current position is

lower than a predetermined value and changes the motor to torque control when the difference between the positional instruction and the current position exceeds the predetermined value.

21. (Twice Amended) A controller for controlling the thrust converter as defined in claim 56, comprising:

an input section for entering a correction value to be used for correcting a mechanical positional error of the thrust converter;

storage section for storing the correction value entered by way of the input section; and

correction section for correcting the mechanical positional error of the thrust converter on the basis of the correction value stored in the storage section.



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In re application of

Kouichi TAKAMUNE, et al.

Appln. No.: 09/936,332

Group Art Unit: 2834

Confirmation No.: 4058

Examiner: Judson JONES

Filed: December 31, 2001

For: THRUST CONVERTER, METHOD OF CONTROLLING THE SAME, AND CONTROLLER
FOR CONTROLLING THE SAME

PAPER(S) FILED ENTITLED:

1. AMENDMENT UNDER 37 C.F.R. § 1.111

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ATTORNEY/SEC: RCT/ST/rhs

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